

REMARKS

The foregoing amendments and the following remarks are made in response to the Final Office Action (hereinafter "the Action") dated November 7, 2006. The above-identified patent application was filed September 19, 2003 with claims 1-19. The Examiner issued a restriction requirement dated December 28, 2005. Claims 1-13 were elected on January 27, 2006. The Examiner then issued an Office Action dated April 7, 2006 in which the Examiner rejected claims 1-3 and 6-13 under 35 U.S.C. §103 and indicated that claims 4, 5 and 14-19 were withdrawn.

Claims 1-3 and 6-13 are pending in this application. Claim 1 has been amended. In view of the arguments set forth below, claims 1-3 and 6-13 are allowable, and the Examiner is respectfully requested to withdraw the rejections and issue a Notice of Allowance.

I. SUMMARY OF INTERVIEW

A brief interview was conducted between an Advocate for the Applicant and the Examiner on March 26, 2007. Applicant appreciates that the interview was allowed after a Final Office Action. The content of the discussion was directed to amending the claims such that the claims would be in their original form. Also discussed was whether a need exists for an additional search and a Request for Continued Examination to allow entry of the amendments. A Request for Continued Examination accompanies this Response.

II. CLAIM REJECTIONS UNDER 35 USC §112

Independent claim 1 stands amended, returning it to its original form that was not rejected under 35 USC § 112 in the Office Action of April 7, 2006. Claim 13 has proper antecedent basis with the restoration of original claim 1. As rejections based on prior art are not directed to the new matter, the undersigned representative believes that by removal of the limitations included by the earlier amendment does not require an additional search of the literature and that the amended claims be allowed.

III. CLAIM REJECTIONS UNDER 35 USC §103

The Examiner rejected claims 1-32 and 6-13 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 5,302,415 to *Gabara et al.* in view of United States Patent No. 4,204,013 to *Arcsilesi et al.* and in view of United States Patent No. 4,716,055 to *Sanders et al.* The Examiner stated that *Gabara et al.* discloses the elements of the claimed invention recited in claim 1 except for contacting the pre-metallized organic substrate with Na₄EDTA before placing the substrate into the electroless silver bath and a scouring step. The Examiner stated that *Arcsilesi et al.* discloses use of a Na₄EDTA treatment prior to electroless plating plastic substrates and after sensitization in a stannous chloride solution acts to accelerate the deposition during the electroless process and make the substrate more receptive to electroless plating. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify

Gabara et al. to include an acceleration step as disclosed by *Arcilesi et al.* with an expectation that this step would accelerate the electroless deposition and make the substrate more receptive to the plating process. The Examiner also stated that *Sanders et al.* discloses a process where an organic substrate, a fiber, is scoured prior to etching and concluded that it would be obvious to further combine the step of scouring in *Sanders et al.* with the process of *Gabara et al.* and the acceleration step of *Arcilesi et al.* to arrive at the present invention.

Applicant respectfully disagrees with Examiner's assertion that the present invention is obvious by the combination of *Gabara et al.* with *Arcilesi et al.* and *Sanders et al.* One of ordinary skill in the art would not be motivated to modify the method of *Gabara et al.* with the inclusion of the accelerator treatment of *Arcilesi et al.* and the scouring of *Sanders et al.* *Gabara et al.* teaches a critical strong acid treatment with specifically a polyaramide surface as the organic substrate. This treatment can not be used with most organic substrates and care has to be taken not to damage the substrate even with the polyaramides (*Gabara et al.* col. 3 line 47 to col. 4 line 8). As taught in *Gabara et al.*, without washing with a sulfuric acid solution in excess of 80 % for at least 15 minutes, very little or no plating can occur (col. 9, Tables 4 and 5). One of ordinary skill in the art could only conclude that, according to the disclosure of *Gabara et al.*, the electroless plating of silver on an organic substrate is not possible without the strong acid treatment. Furthermore, knowing that many organic substrates, including those used to illustrate the present invention, may not survive this acid

treatment, one of skill in the art would not look to *Gabara et al.* to develop a method to treating a non-aramide substrate without a strong acid treatment step.

The deficiency of *Gabara et al.* to yield a general method for organic substrates by preceding the strong acid etching step with a scouring step before introduction of the substrate to a sensitizing solution is not obvious by combining *Gabara et al.* with *Sanders et al.* The present invention, as recited in claim 1, does not have an acid etching step prior to the sensitizing step. *Sanders et al.* discloses a process that is illustrated in the Detailed Description only with a specific polymer, polyacrylonitrile and its copolymers, and a specific metal, nickel, which is deposited coincidental (included within) the polyacrylonitrile substrate (col. 4 lines 9-39) rather than a method to produce a silver plated on a general organic substrate's surface. The scouring step in *Sanders et al.* referred to by the Examiner in the Action illustrates a prior art example where scouring is carried out with a fiber before acid etching to ultimately deposit copper and yield a metallized fiber that has no durability and extremely poor conductivity, implying poor incorporation of the metal and the failure of that method to achieve the goal of *Sanders et al.* or the goal of the present invention (col. 5 line 52 – col. 6 line 25 Example 1 (Prior Art)). In a second prior art example, the scouring step is again carried out before an acid etching step where nickel is the metal deposited and again the prior art method fails to achieve good conductivity and durability (col. 6 line 35 – col. 7 line 11 Example 2 (Prior Art)). The disclosure of the invention of *Sanders et al.* teaches that there is no need for scouring or acid etching as indicated in all examples of the invention

of *Sanders et al.* Because the scouring step is present before an acid etch in prior art examples that do not achieve the goal of the invention of *Sanders et al.* or the goal of the present invention, and because *Sanders et al.* does not disclose a need for scouring, one of ordinary skill in the art is not be motivated to combine *Sanders et al.* with *Gabara et al.*, which does not teach a scouring step but requires a strong acid etching step, to conclude that there is a need for the scouring step without an etching step prior to a sensitization step as in the present invention.

Arcilesi et al. does not teach the inclusion of Na_4EDTA in a manner that would motivate its combination with *Gabara et al.* to arrive at the present invention. *Arcilesi et al.* discloses only nickel plating and does not disclose silver plating. *Arcilesi et al.* requires an alkyl amine to scavenge retarding metals from a palladium surface required to initiate the nickel deposition (col. 4 lines 49-62). Furthermore, although *Arcilesi et al.* does disclose that the source of the alkyl amine can be Na_4EDTA , the active species for acceleration is not the tetra-sodium salt of the EDTA added to the accelerator solution, as the solution is acidic, pH 0-7 and preferably < 1 , a condition where the tetra-sodium salt does not exist in solution (col. 6 lines 3-10). The Na_4EDTA in the present invention is in an aqueous solution where it is obvious that no acid can be present. Although claim 1 of the present invention does not recite that the Na_4EDTA solution must specifically be free of acid, the Na_4EDTA solution is inherently required in a form that allows the claimed deposition of silver oxide on the organic substrate. Those of ordinary skill in the art know that silver oxide does not form in an acid

solution and hence would not consider that the aqueous Na₄EDTA of claim 1 could be an acidic solution. Therefore, one of ordinary skill in the art would not be motivated to combine *Arcilesi et al.* which requires an acidic EDTA solution for nickel plating with *Gabara et al.* which teaches silver plating and no need for Na₄EDTA to arrive at the present invention where the use of an aqueous Na₄EDTA that inherently can not be acidic is required to prepare the desired silver plated organic substrate. Furthermore, the need for the alkyl amine of *Arcilesi et al.* is due solely because of the use of palladium in that method and, therefore, as palladium is not used in *Gabara et al.* or the present invention, the advantages of using Na₄EDTA in the present invention can not flow naturally from following the suggestions of *Arcilesi et al.* and no motivation is provided to combine *Gabara et al.* with *Arcilesi et al.* Thus, for at least the reasons given above, *Arcilesi et al.*, *Gabara et al.* and *Sanders et al.* do not render obvious claims 1-3 and 6-13, and the Examiner is respectfully requested to withdraw the rejection.

IV. PETITION FOR TWO MONTH EXTENSION OF TIME

This is a Petition for a two Month Extension of Time pursuant to 37 CFR § 1.136. Please charge the fee in the amount of \$450.00 for a two (2) month extension of time pursuant to 37 CFR § 1.17(a)(2) and charge any underpayment or credit any overpayment to Deposit Account No. 50-0951. A duplicate copy of this communication is enclosed.

CONCLUSION

For at least the reasons given above, claims 1-3 and 6-13 define patentable subject matter and are thus allowable. Should the Examiner believe that anything further is necessary in order to place the application in better condition for allowance, the Examiner is respectfully requested to contact the undersigned representative at the telephone number listed below.

No fees, in addition to the extension of time and request for continued examination, are believed due; however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 50-0951.

Respectfully submitted,



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